

REMARKS/ARGUMENTS

Reconsideration of the present application is respectfully requested.

Since the present amendment raises no new issues for consideration and, in any event, places the present application in better condition for consideration on appeal, it is respectfully requested that this amendment be entered under 37 CFR 1.116 in response to the last Office Action dated September 21, 2004, which made final rejections as to the pending claims.

A. STATUS OF THE CLAIMS

Claims 1-4 and 6-23 are presented in the case for continued prosecution. No claim amendments have been made at this time.

B. THE INVENTION

The present invention includes a method for fabricating a functional dental element wherein layers of a suitable material are successively applied and subjected to a sintering step followed by infiltration with a second phase. A dental element obtainable by this method is also claimed.

The sintering step of the present invention has the advantage that the powder particles are bonded in such a manner that only necks are formed, thereby minimizing shrinkage and enhancing mechanical strength (page 8, lines 13-14 and 24-26).

C. REJECTIONS UNDER 35 U.S.C. § 102(a)

The Examiner has rejected the subject matter of claims 1-4, 6, 9, 11 and 20-23 under 35 U.S.C. § 102(a) as being anticipated by Brodtkin (US 6,322,728). In order to maintain an anticipation rejection under 35 U.S.C. § 102, a prior art reference must disclose each and every element of the rejected claims with sufficient clarity to prove its existence in the prior art, *In re Spada*, 15 USPQ 2d 1655, 1657 (Fed. Cir. 1990). Although this disclosure requirement presupposes the knowledge of one skilled in the art of the claimed invention, that presumed knowledge does not grant a license to read into

the prior art reference teachings that are not there, *Motorola, Inc. v. Interdigital Tech. Corp.*, 43 USPQ 2d 1481, 1490 (Fed. Cir. 1997).

Brodkin does not teach forming necks between the powder particles during the sintering step

Brodkin discloses a method of forming a dental restoration using a three-dimensional printing technique. The Examiner has cited col. 4, lines 13-49 of Brodkin to teach the deposition of multiple layers of a powdered material including a binder and the subsequent heating or curing of the layers to further promote binding of the powdered particles. The Examiner has assumed that the subsequent heating taught by Brodkin is equivalent to the sintering of the present invention, since the heating of Brodkin would form a "coherent mass" of powdered particles (page 2, paragraph 5 of the Office Action).

Applicant respectfully disagrees with the Examiner's statement that the subsequent heating of Brodkin is equivalent to the sintering of the present invention. First, the sintering step of the present invention does not simply form a coherent mass as stated by the Examiner. As explained at page 8, lines 21-27 of the Application, the sintering of the present invention is conducted in such a manner that only necks are formed between the powdered particles, thereby minimizing shrinkage of the dental element during the sintering step. This minimization in shrinkage results in a dental element having increased mechanical strength. The sintering of the present invention therefore significantly differs from the mere formation of a coherent mass as taught by Brodkin. Applicant respectfully submits that the sintering step of the present invention is not anticipated by Brodkin as required to maintain a rejection under 102(a).

In furtherance of the above comments, Brodkin, however, does specifically explain that the binder (colloidal silica), not the sintering step, causes aggregation at the necks to form bonds between the powdered particles (col. 6, lines 11-20). Brodkin therefore does acknowledge neck formation, but the neck formation results from an aggregation of the binder and not from a bonding of the powdered particles during the sintering step as achieved in the present invention. It cannot therefore be said that Brodkin discloses each and every element of the claimed invention with sufficient clarity to maintain a rejection under 102(a), because Brodkin is completely silent with respect to

neck formation between the powdered particles during the sintering step as required by the claimed invention. Moreover, in accordance with the *Motorola* decision discussed supra, the teaching in col. 6 of Brodtkin that the binder aggregates at the necks does not grant a license to read into col. 4 of Brodtkin a teaching that the powdered particles themselves are sintered in such a manner as to cause aggregation at the necks.

Reconsideration and removal of the rejection is respectfully requested.

D. REJECTIONS UNDER 35 U.S.C. § 103(a)

The Examiner has rejected the subject matter of claims 1-6, 9-15, 17, 19 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Brodtkin in view of Sachs (US 5,204,055). The subject matter of claims 7 and 8 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Brodtkin in view of Sachs and Yamada (US 5,641,434). In addition, the subject matter of claim 16 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Brodtkin in view of Sachs and Ota (US 6,322,728).

Sachs has been cited to teach applying the powdered layer with a doctor blade and utilizing layers with different compositions. Yamada has been cited to teach polyvinyl alcohol and acrylate binders, while Ota has been cited to teach powdered particles smaller than 50 nm. The teachings of Brodtkin have been discussed above.

In order to maintain a *prima facie* obviousness rejection under 35 U.S.C. § 103(a), a prior art reference or a combination of references must render the claimed subject matter as a whole obvious at the time the invention was made to a person having ordinary skill in the art. Sachs, Yamada and Ota have been cited to reject the subject matter recited in the dependent claims. These references do not cure the deficiencies of Brodtkin with regard to the teachings of the present invention set forth above. Thus, the present invention is not taught or suggested in a combination of all of the cited references, even if one were to make such a combination.

It is therefore respectfully submitted that all of the claims are patentable over the cited references taken alone or in combination. Reconsideration and removal of the rejections is therefore proper and requested.

E. FEES

This response is being filed within the shortened period for response. No further fee is believed to be due. If, on the other hand, it is determined that any further fees are due or any overpayment has been made, the Assistant Commissioner is hereby authorized to debit or credit such sum to Deposit Account No. 02-2275. Pursuant to 37 C.F.R. 1.136(a)(3), please treat this and any concurrent or future reply in this application that requires a petition for an extension of time for its timely submission as incorporating a petition for extension of time for the appropriate length of time. The fee associated therewith is to be charged to Deposit Account No. 02-2275.

F. CONCLUSION

In view of the actions taken and arguments presented, it is respectfully submitted that each and every one of the matters raised by the Examiner have been addressed by the present amendment and that the present application is now in condition for allowance.

An early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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